

REMARKS

Applicants respectfully request reconsideration of this application in view of the foregoing amendments and the following remarks.

Claim Status

Claims 1-40 are pending in this application. Claims 32-37 have been withdrawn and are herein canceled. Claims 1-31 and 38-40 have been rejected. Claims 1, 3-8, 10-12, 19, 20, 24, 29 and 38-40 are herein amended. No new matter has been added by these amendments.

Claim Objections

Claims 19 and 40 have been objected to because the term “invert” should be changed to “inverter”. Claims 19 and 40 have been amended as per the Examiner’s suggestion. Reconsideration of the claim objections is respectfully requested.

Rejections Under 35 U.S.C. § 112

Claims 1-31 and 38-40 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, independent claims 1, 8, 29 and 38 have been rejected because the term “leakage sensitivities” is not defined in the claims.

Claims 1, 3, 4, 8, 12, 29 and 38 have been amended to recite “current leakage sensitivities”. Reconsideration of the § 112, second paragraph, rejections is respectfully requested.

Rejections Under 35 U.S.C. § 102

Claims 1-12, 16-19, 29-31, 38 and 40 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 20050044515 (Acar). Claims 1-12, 15-19, 29-31 and 38-40 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application No. 2002144223 (Usami). Claims 1-19, 29-31 and 38-40 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,345,379 (Khouja).

Applicants respectfully submit that neither Acar, Usami nor Khouja discloses synthesizing a new circuit model by factoring one or more kernels of topologies of an original circuit model to determine one or more new topologies having reduced current leakage sensitivities and applying the one or more new topologies to the new circuit model, wherein the new circuit model has a reduced current leakage with respect to the original circuit model. See e.g., Fig. 7 and ¶¶0055-57 of Applicants' disclosure.

Independent claim 1 as amended recites, a system for designing electronic circuits comprising:

- a memory device for storing a program;
- a processor in communication with the memory device, the processor operative with the program to:
 - receive an original circuit model, wherein the original circuit model has one or more logic gates, wherein each logic gate has a topology;
 - calculate current leakage sensitivities for each of the topologies;
 - provide the current leakage sensitivities to a library;
- and
- synthesize a new circuit model by factoring one or more kernels of the topologies of the original circuit model to determine one or more new topologies having reduced current leakage sensitivities and applying the one or more new topologies to the new circuit model, wherein the new circuit model has a reduced current leakage with respect to the original circuit model.

As posited above, neither Acar, Usami nor Khouja discloses a system as recited in amended claim 1. Instead, Usami discloses logic circuit design equipment including, *inter alia*, a leakage current analysis section 24d for calculating leakage current of each new logic circuit generated by a mapping method. See e.g., Fig. 6 and ¶0064 of Usami. Khouja, in contrast to the embodiment of the present invention recited in claim 1, discloses estimating power dissipation at the gate level. See e.g., col. 10, lines 1-3 and Fig. 3 of Khouja. As can be gleaned, neither Usami nor Khouja discloses factoring one or more kernels of the topologies of an original circuit model to determine one or more new topologies having reduced current leakage sensitivities and applying the one or more new topologies to the new circuit model, wherein the new circuit model has a reduced leakage current with respect to the original circuit model. With regard to Acar, Acar does not disclose kernel factoring as essentially indicated by the Examiner (e.g., the Examiner did not reject claim 39 in view thereof). Accordingly, Applicants believe that the embodiment of the invention as recited in claim 1 is patentable over the cited art of record because neither Acar, Usami nor Khouja discloses the embodiment of the invention as recited therein.

Independent claims 8, 29 and 38 have been similarly amended and are believed to be allowable for at least the same reasons.

Amendments to Claims 5, 6, 7, 10, 11, 20, 24 and 39

Claims 5, 6 and 7 have been amended to further clarify the synthesizing step and are believed to be allowable for at least the reasons discussed above for claim 1.

Claims 10 and 11 have been amended to correct grammatical deficiencies therein and are believed to be allowable for at least the reasons discussed above for claim 8.

Claim 20 has been amended to bring it into conformity with the amendments to claim 8 from which it depends and is believed to be allowable for at least the same reasons.

Claim 24 has been amended to depend from claim 8 and is believed to be allowable for at least the same reasons.

Claim 39 has been amended to bring it into conformity with the amendments to claim 38 from which it depends and is believed to be allowable for at least the same reasons.


Dependent Claims

Applicants have not independently addressed the rejections of all the dependent claims because Applicants submit that, in view of the amendments to the claims presented herein and, for at least similar reasons as why the independent claims from which the dependent claims depend are believed allowable as discussed, supra, the dependent claims are also allowable. Applicants however, reserve the right to address any individual rejections of the dependent claims should such be necessary or appropriate.

CONCLUSION

Accordingly, Applicants submit that the claims as herein presented are allowable over the prior art of record, taken alone or in combination, and that the respective rejections be withdrawn. Applicants further submit that the application is hereby placed in condition for allowance which action is earnestly solicited.

Respectfully submitted,

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